

Chapter 3: Implementation

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Chapter overview

This chapter describes the implementation phase of integrated workplace health programming. Included are:

- A description of the levels of implementation (environmental, organizational and individual), and what they look like
- An outline of the steps of implementation, with examples
- A description of a hospital food service/cafeteria overhaul, as a theoretical example of integration on a large scale
- Some additional sample programs from the Center’s workplace studies, and suggestions for additional resources
- Descriptions of organization using approaches similar to SafeWell

What is an “integrated” approach to workplace health?

As previously described in these Guidelines, the concept of an integrated workplace program refers to the strategic combination of health protection (from an occupational safety approach) and health promotion (from a wellness perspective). Another aspect of this concept is attention to organizational supports such as benefit design, balance, and the quality of work-life. Finally, this approach requires implementation across multiple realms: the overall physical environment (personal workspace, overall layout); the organizational environment (policies, practices, norms); and at the individual level, personal decision-making and behavior choices.

Implementing an integrated program: What does it look like?

The end of “Chapter 2: Program Planning” included a plan based on a company’s priorities and the data gathered from workplace assessments of employees, the organization, and the physical facility. Implementation is the execution of that plan. It includes everything from specifying objectives, timelines, and measures for success, to identifying key personnel, and obtaining programmatic resources. The Centers for Disease Control and Prevention identifies four major categories for workplace strategies and interventions: (available at: <http://cdc.gov/WORKPLACEhealthpromotion/model/>)

1. **Programs:** Opportunities available to employees at the workplace or through outside organizations to begin, change or maintain health behaviors
2. **Health-related policies:** Formal/informal written statements designed to protect or promote safety, health, and wellbeing and affecting large groups of employees simultaneously
3. **Benefits:** Part of an overall compensation package including health insurance coverage and other services or discounts regarding health, safety and wellbeing
4. **Environmental supports:** Physical factors at and nearby the workplace that help protect and enhance employee health

The implementation of the plan is where these strategies become visible, whether this is a major component, like revamping the cafeteria and food service to improve the health of all employees (including the safety and ergonomics of cafeteria workers), or something less extensive like distributing educational materials on factors impacting healthy eating choices at work and at home. It is a given that companies will vary greatly in size, organization, and resources, so the different types of programs and styles of implementation will accordingly vary.

Implementing on multiple levels

Implementation includes policies, events, activities, practices, and materials or products at all levels, from environmental and organizational, through interpersonal and individual. The CDC Workforce Health Promotion Initiative (<http://cdc.gov/workplacehealthpromotion/implementation/index.html>) describes these levels of implementation as follows:

- **Environmental:** Implementation at this level involves physical aspects of the workplace, such as facilities and settings where employees work, including layout and design of workspaces, shower facilities, bike racks, noise levels, air quality, and exposure to toxic substances. Interventions at this level can provide protection from work place hazards and support for healthy behaviors.
- **Organizational:** This level includes elements of the workplace structure, culture, practices and policies such as health benefits, health promotion programs, work organization, and leadership and management support. This has also been described as the “psychosocial environment” and includes work schedules, coordinating work and home responsibilities, deadlines, shift work,

job security, available training and support, and interpersonal relationships, including supervisor communication and feedback, peer communication, family relationships. Interventions at this level can provide support for safe work practices and for healthy behaviors. Psychosocial hazards have often been identified as contributing factors to workplace safety and health risks.

- **Individual:** This level includes elements of an employee’s individual health behaviors and health and safety knowledge, personal risk factors, and current health status. Whenever environmental or organizational changes are put into effect, there is always a “human factor”--a result of the interface between people, organizations and environments that accounts for the variability among individual experiences.

While these levels overlap, each of them accommodates different types of implementation, and the best workplace health programs make use of all of them in a coordinated manner. A program that primarily addresses an individual behavior, such as smoking, might include an individual level health risk assessment with feedback or health coaching (see “Chapter 2: Program Planning”) to increase employees’ awareness and knowledge of tobacco as a risk factor. It may also include organizational level elements (e.g., a campus-wide nonsmoking policy and benefits providing Quit classes and nicotine replacement therapy) and environmental level components such as a walkthrough to identify any potential air quality issues that may interact synergistically with tobacco smoke to increase risk of disease.

Note that the degree of integration at an organization may also vary. When beginning to use the SafeWell approach at the basic level, it may be necessary to purchase programs from a vendor or bring in community resources, and it may not be possible to integrate all the program elements. Companies need to start where it makes sense to start, both for management and for employees. Rather than “starting small,” companies should consider “starting smart” by leveraging existing resources to get the most immediate change, visibility, and success.

Controlling workplace hazards

Controlling workplace hazards requires taking action, but there is a wide variety of available options. The action may be a walk-through assessment of the physical environment or implementing a standard protocol for training employees to prevent exposure to biological hazards. Ideally, identified hazards are eliminated through a comprehensive occupational safety and health management (OSHMS) program. Although there are instances where eliminating the hazard is not possible (in a hospital setting, this might be exposure to blood or infectious organisms; or it might be musculoskeletal, such as handling and transferring of patients), it is always possible to reduce exposure to hazards through preventive measures.

Within the options for taking action, some are recommended over others. The SafeWell guidelines follow the “hierarchy of controls” model used in occupational safety and health practice as a means of implementing feasible and effective control solutions. In

this hierarchy, the most preferable option is to eliminate hazards completely. A good example of this approach is to eradicate risks through careful planning or redesign. For example, NIOSH has developed an initiative that has come to be known as “Prevention through Design,” (PtD) (<http://www.cdc.gov/niosh/topics/ptd/>). The design of equipment, supplies, architectural space, and work processes can be influenced for enhanced safety. Eliminating hazards through design precludes the need for control.

The ranked options for minimizing hazards are included in descending order of preference:

- Elimination: See description above.
- Substitution: For example replacing a hazardous chemical with a less hazardous alternative
- Engineering controls: Controlling the hazard/risk at source through the use of engineering controls where feasible and appropriate (e.g., using mechanical transferring devices to minimize manual handling in patient care; using medical devices with injury prevention features, such as retractable syringes; ventilation for removing dusts, chemical vapors, and other impurities from indoor air; enclosures for noise prevention)
- Administrative controls: Establishing administrative controls to minimize hazardous exposures, including work practices, warning signs, training, housekeeping
- Personal protective equipment: Use of personal protective equipment as the last resort.

In the area of wellness, the “hierarchy of controls” does not always apply, because wellness programs focus more on encouraging healthful behaviors rather than controlling hazards. However, a parallel approach can be applied to controlling risks related to individuals and their behavior choices. For instance, eliminating smoking at the worksite means reducing the exposure of the smoker (and others) to tobacco smoke. This strategy is also used in company cafeterias and food services where some of the high-fat choices have been eliminated (or served less frequently) and replaced with healthier options. Other examples, illustrating the PtD concept, include the design of easily accessible and well-maintained walking paths at the work site, a large central staircase, or an on-site fitness facility to encourage physical activity. These options provide employees with opportunities to try something new on a small scale before committing to a more intensive program, or to practice small but repeated healthy choices.

Implementation Process Flow: Steps in the cycle

Table 2 describes the steps of the flow diagram in Figure 2, which represents a typical progression of steps for implementing an integrated program. As these Guidelines chapters illustrate, the overarching sequence is organizational leadership and commitment, planning, implementation, and evaluation. In this chart, the green boxes

represent decision-making steps involving organizational leadership and employee engagement (Chapter 1), blue boxes are steps in planning (Chapter 2), the gold box is for implementation (Chapter 3), and red boxes are steps in evaluation (Chapter 4). The purple box, “Start Smart,” is explained below. The diagram shows a circular flow of steps, with the potential for overall continual improvement in the system, so each cycle of improvement builds on previous experience and lessons learned. While Figure 2 represents a process flow, there may be overlaps and feedback loops between the boxes. For instance, depending on what resources are engaged, objectives may need to be reset, or as materials are developed, more resources may need to be engaged. An additional example is if at the “set timeline” step it becomes clear that more time is needed, options might include adjusting the time frame or revisiting the objectives set earlier to see if they might be scaled back to meet the time frame.

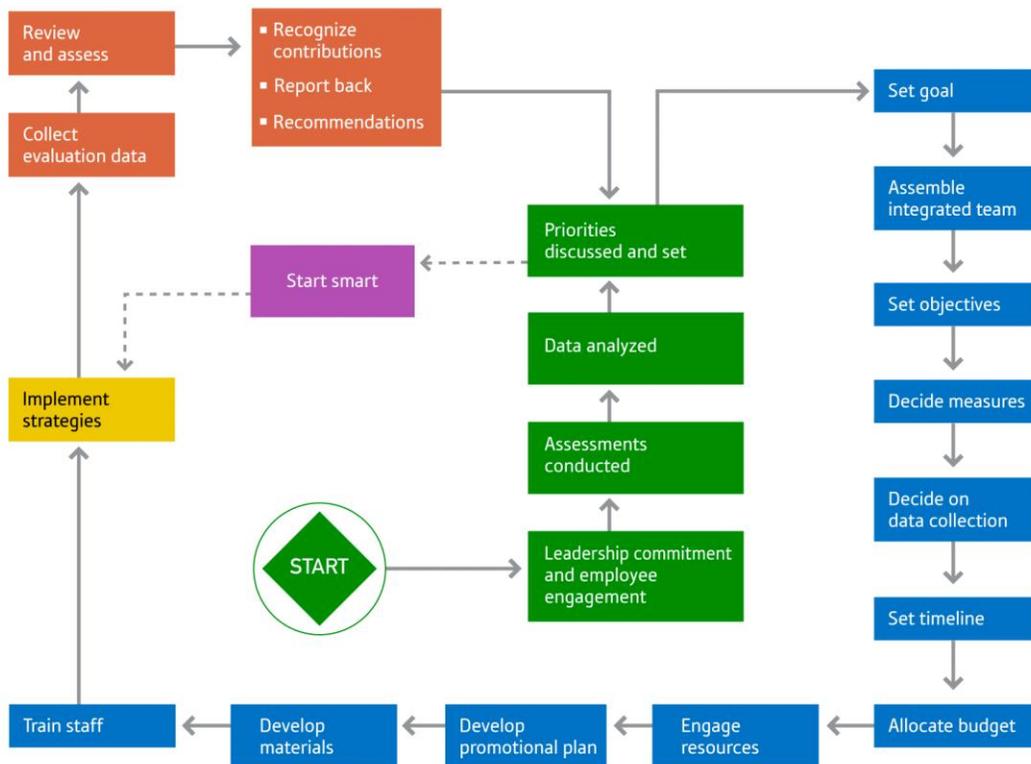


Figure 2 SafeWell implementation process flow

Start Smart

It is important to keep in mind that this is a cycle that can be initiated at any point that makes sense for the company’s situation. The overall process is iterative. The steps in this process flow are somewhat fluid and, as illustrated in Figure 2, do not always follow a direct progression.

Strategic detours and shortcuts may be taken when opportunities present themselves. For instance, perhaps a company has already completed environmental assessments, organizational policy reviews, and employees have completed individual health risk appraisals (HRAs). As a result, the company already has analyzed the data, prioritized issues and set goals. It does not make sense to have to re-do all these assessments. Rather than waiting months for the complete assessment, the planning committee might go ahead with health coaching activities for employees based on their HRA results. This option allows the use of the HRA data immediately by offering individual feedback and counseling to employees. This is an example of “starting smart” (the purple box in Figure 2) because capitalizing on the available data and priorities to jumpstart activities builds on processes already underway at worksites. It can also begin to engage employees and build awareness of the overall program goals and objectives, while the larger-scale planning is continuing.

Table 2 below describes each of the steps of the flow chart in more detail, and provides an example of implementation based on the sample plan from Chapter 2 (page 83) which had as its priority the reduction of back injuries. A description of each step is provided in the table below.

Table 2 Description of SafeWell implementation process flow steps

Implementation step	Description
LEADERSHIP	High-level organizational leaders endorse and commit to the integrated program. <i>Example:</i> In a prominent article featured on the organization’s intranet site, the President/CEO is interviewed about the benefits of the SafeWell program and why the organization has initiated it.
ENGAGEMENT	Employees at all levels become involved in the program. Some are particularly interested in the employee advisory board (or expanded health and safety committee). Supervisors are encouraged to allow time for hourly staff to participate. <i>Example:</i> Recruitment notices are distributed to solicit employees to join the Employee Advisory Board (EAB) to provide representation for their department or work group.
ASSESSMENTS	Organization-wide assessments are conducted, including employee surveys and health evaluations, OSH walk-throughs, focus groups (on safety and wellness topics), data reviews, etc. (See Chapter 2 for samples).

	<p><i>Example:</i> Employees are offered an individual health risk appraisal with follow up counseling by phone with a health coach.</p>
DATA ANALYSIS	<p>Findings from assessments are tabulated and analyzed for trends, comparisons with benchmarks where available, and to identify priority areas needing change.</p> <p><i>Example:</i> Data from the health risk appraisals are aggregated and analyzed; results are reviewed by department, by demographic group, over time, etc.</p>
SET GOAL	<p>Identify the goal, which is the actual change desired, and the measure (how it will be assessed to determine whether it has been reached). Measurable objectives for goals are specific, with a target number or percent and timeline.</p> <p>Example (from Chapter 2):</p> <p>Goal: To reduce back injuries</p> <p>Measurable objective: Reduce the number of back injuries at work by 10% in the Orthopedics Department in 1 year.</p>
ASSEMBLE THE INTEGRATED TEAM	<p>Identify and assemble the integrated working team responsible for implementing this plan. This is different from the EAB; it may be an existing group or it may be convened ad hoc, but its focus is to focus on achieving the already chosen and specific goal. The more integrated this team is, the better. Recruit representatives from as wide an array of units as possible. This may include OSH, HR, WHP, administration, purchasing, communications, information systems, and others. Set a schedule for meetings and distribute a contact list for communications.</p> <p><i>Example:</i> In the Chapter 2 example, the program lead is the Director of OSH. S/he will be assisted by a team including an OSH nurse, the Nurse Manager on Orthopedics, a nurse champion from Orthopedics, the Wellness Coordinator, an HR representative for benefits, and the Communications representative for the SafeWell program.</p>
SET INTEGRATED OBJECTIVES	<p>Present the plan and its overall goal to the team.</p> <p>Discuss, brainstorm, and set specific objectives to achieve the goal. Look for evidence-based interventions (EBIs) that will fit the goal (<i>See Appendix 2 for EBI resources such as The Community Guide, RTIPS, etc.</i>).</p> <p><i>Example:</i> Organizational and environmental objectives:</p>

	<ul style="list-style-type: none"> • Institute safe patient handling/movement (SPH) policy and procedures • Install SPH equipment • Institute other ergonomic programs and policies • Instill supervisor support of staff break-time • Instill supervisor support of physical activity • Provide benefits through HR for gym memberships • Make walking trails and stairwells attractive • Provide areas for stretching <p>Individual level objectives:</p> <ul style="list-style-type: none"> • Train staff and supervisors in SPH • Communicate to all employees ways to reduce back injuries at home and at work • Install ergonomic work stations for office workers • Provide burn-out prevention counseling for individuals • Instill co-worker support of break-times • Instill co-worker support of exercises to strengthen backs
DECIDE ON MEASURES	<p>Identify appropriate measures for the overall goal and for each objective. Look for measures that will demonstrate that the goal has been met. Additionally, process measures can track communications, policy implementation, trainings, and programs that occur.</p> <p><i>Example:</i> Overall measure: The baseline measure will be the number of back injuries in the Orthopedics Department at the start of the program. The follow-up measure will be the same number, at one year from baseline.</p>
DATA COLLECTION	<p>Decide how the measures will be applied, i.e., how data will be collected.</p> <p><i>Example:</i> The data will be drawn from the Occupational Hazard and Injuries Report Form (e.g., Chapter 2, Appendix 4) and the employee health assessment.</p>
SET TIMELINES	<p>Decide on due dates and time frames for all activities, including preparation, promotion, events and activities, and evaluation and reporting. Each step/objective will need to be outlined with its corresponding due dates. It is often helpful to work back from the date of the event/activity (or policy/program implementation).</p> <p><i>Example:</i> First, there will be communications to employees about the need for new practices. Then a schedule for trainings</p>

	<p>will be implemented and environmental changes (e.g. ergonomic work stations) will be implemented. Finally, policy changes will be announced.</p>
<p>CREATE BUDGET</p>	<p>Determine a budget required to meet these objectives and make allocations. Identify and engage resources (human and material). Determine what resources are needed and designate individuals to obtain them. This may include incentives and rewards, such as financial rewards, time off, and recognition.</p> <p>Get approval for purchasing supplies, equipment, printing, vendor services, etc. Consider sharing costs across OSH, WHP and HR departments.</p> <p><i>Example:</i> Estimates are obtained for installation of ergonomic work stations. For other strategies, the only costs are related to communication (posters, handouts, table tents to provide education about back safety, stretching areas and tips, taking break time, physical activity, etc.); the hospital's communications department provides in-kind support through printing and design services. Funds are allocated for paper and ink for posters and handouts. Material provided on the organization's intranet is at no cost. Several costs are covered by existing services (subsidy benefit for gym membership, group programs and individual ergonomic consults from OSH staff, etc.).</p>
<p>PROMOTION</p>	<p>Develop a strategic promotion plan, considering all constituencies involved in this program: medical staff, administrative staff, patients, and families. Obtain supervisor support for employee participation.</p> <p><i>Example:</i> The team meets with the Marketing, Communications or External Affairs departments to strategize about the best way to promote the new program to each of these constituencies.</p>
<p>MATERIALS</p>	<p>Develop materials for targeted promotion and education. Educational materials for participants/families may need to go through an approval process.</p> <p><i>Example:</i> Materials include handouts for programs; posters for workplace; brochures for employees; notices on hospital intranet; table tents in cafeteria.</p>
<p>STAFFING</p>	<p>Train staff, or arrange for appropriate vendors or volunteers to deliver programs.</p> <p><i>Example:</i> HR negotiates with a local YWCA to bring in an</p>

	<p>exercise group leader to provide presentations about back health, safety, and exercises for strengthening core muscles. A staff doctor provides training for supervisors on the relationship between back health, worker productivity, and overall well-being.</p>
IMPLEMENT	<p>Implement the planned strategies for the specified event, activity, policy or program.</p> <p><i>Example:</i> A training curriculum for use of new SPH equipment is made available on the intranet and in scheduled small group sessions by department.</p>
EVALUATE	<p>Collect information on the program, policy, or event itself and how it was implemented. This can include process information such as: participation rates, resources used, training time, costs, etc.</p> <p><i>Example:</i> Process data is collected to track costs and time spent toward meeting this goal. For satisfaction data, employees are asked about satisfaction with programs, or changes in policies and procedures. For programs or events, this could be a brief survey completed for a chance to win a raffle prize, or quick exit interviews conducted by staff, for example. Knowledge and behavior change data (could be pre/post or benchmark comparison) is collected to assess information changes, including knowledge of the topic and awareness of policy, and how many have taken advantage of a new benefit.</p>
REVIEW	<p>Reconvene the integrated team to:</p> <ul style="list-style-type: none"> • Review results • Review costs • Assess feasibility • Assess participation • Assess whether objectives were met • Compare results to goal set originally <p><i>Example:</i> The group assesses the findings and concludes that many of the objectives were met: a new SPH policy was implemented and publicized, staff and supervisors were trained in SPH procedures, and Human Resources is now offering a gym membership rebate. However, regarding the measurable goal--a “10% reduction in back injuries at work in the Orthopedics Department in 1 year”--they will not be able to assess it until a year has passed and a follow up measure can be obtained.</p>

<p>REPORT AND RECOMMEND</p>	<p>This is a critical step in the continual improvement process. The written evaluation includes lessons learned and recommendations for continuing, repeating, or changing the implementation plan for the next time. The team presents their report to the organization’s SIMS steering committee (see Chapter 1). Findings are used to inform future planning efforts, to set new priorities and to revise objectives. Objectives that are met are factored into revised goal setting.</p> <p><i>Example:</i> The Integrated Team has learned effective ways to implement policy changes and communicate them to staff. Promotion strategies will be used again in working on future goals. Findings showed that participation was good across all three work shifts. Training competency on SPH will be included in supervisory performance evaluations. The team also found that staff did not increase their use of available break time, so the team recommends that new strategies be designed for this objective, which can then be incorporated into the next appropriate event or activity.</p>
<p>RECOGNITION</p>	<p>Recognize working group participants for their contributions, for example by submitting success stories and pictures for organizational media (newsletter, intranet, etc.).</p> <p><i>Example:</i> OSH staff who provided ergonomic evaluations for individual employees are recognized for their contributions with certificates of appreciation and an article in the employee newsletter. Employees who attended special exercise sessions and those who took advantage of a discount offer to join the YWCA were acknowledged. A revised edition of the Employee Policy Handbook, including the new policies, is made available by HR.</p>

Now that the framework and steps for implementing the SafeWell approach have been discussed, it is useful to look at all these various components together in a hypothetical example.

**Putting the components together:
A SafeWell implementation example**

Table 2 presented a series of implementation steps. The following section takes a closer look, with more examples, at one step in particular: “Set Integrated Objectives.” All of the steps are important, but in this one the value of integrated thinking is critical. As

Chapter 2 demonstrated, assessments are a method for identifying problems or opportunities for improvement. The integrated team brainstorms solutions (strategies) to address those problems.

This hypothetical example of a cafeteria and food services overhaul addresses a combination of occupational and personal health factors, and includes environmental and individual strategies for addressing them. It illustrates how the process of designing an integrated plan for change is based on a systematic approach to analyzing problems and creating integrated solutions.

Protecting and promoting worker health through food services

The opportunity

After conducting a variety of assessments and reviewing findings, the Steering Committee at the hospital decided that high rates of obesity and injury incidents among workers involve cafeteria safety issues and food availability on site. They decided that implementing some major changes in the cafeteria and food services programming would be a prudent way to improve worker health, safety, and well-being.

The steering committee identified an integrated working team (see “Chapter 1: Providing the foundation”) with representatives from safety and health, environmental services, human resources/wellness, employee health, benefits, the food service manager, purchasing, and a nutritionist. (They considered adding the project to the agenda of the existing Health and Safety Committee, but it seemed too large in scope for one committee.)

In this example, the specific risks identified are presented with the suggestions that were discussed for mitigating them. They are organized by level of implementation: environmental, organizational, and individual.

The goal

Recognizing that hospitals are high-stress work environments, the goal was to create a cafeteria experience in which employees could relax and recharge, enjoy healthy and high-quality, tasty food choices, and where food service employees could work safely and without undue pressure. The charge for the working team was to create a Strategic Plan to meet this goal and address all issues, including the following tasks:

- Identify risks related to the food service and the cafeteria
- Identify opportunities for improvement: measures to minimize risks and increase safety, including environmental, organizational, and individual measures
- Plan a program of communications and activities to convey hazard prevention and health promotion messages
- Identify an overall program goal and goals for each objective

The process

The group decided to conduct additional focus groups with food service employees, which provided them with more specific qualitative information. By discussing the greater context of the problems and identifying contributing factors (e.g., those related to work, home and community, safety, and wellness), the group identified several key issues that were contributing to the problems and needed to be considered. In addition, the group held brainstorming sessions to discuss the issues that were raised and generate lists of suggestions and options for improving occupational safety and health, food sanitation and safety, and promotion of healthy food options, while also considering the stress of balancing work and family obligations. This became the basis for the group's plan. With input from the multidisciplinary group, they brainstormed ideas without differentiating between "health promotion" and "occupational safety and health." Instead, they considered the levels and groups of workers to ensure that their plan was comprehensive and covered all aspects of working at the hospital—service, support, secretarial, professional, administrative, janitorial, supplies, technical, etc. The following list provides an idea of the "integrated" ideas they developed.

Environmental level implementation

Risks

A review of occupational health monitoring and disability data showed that the Food Service was one of the hospital's "At Risk" departments, where injury and near-miss incident rates were higher than 80% of the hospital's overall average injury rate. Some of the food prep equipment was older and lacked appropriate safety guards. Frequent lifting and carrying large boxes were causing musculoskeletal injuries. Although there were detailed procedures in place, there was constant concern about avoiding food-borne illnesses. The dining area had a high rate of slips and falls from spilled food and large crowds trying to get through in a hurry. Focus groups also showed that the cafeteria was unappealing for employees outside the food service. It needed painting and renovation from years of accumulated steam and cooking oil spills.

Idea list

- Ensure that all kitchen equipment has proper safeguards and ventilation
- Establish a "Quick response" protocol with the Safety Manager so that even seemingly small problems can be attended to quickly
- Assess all food safety and handling procedures as a preventive measure to avoid food contamination
- Use signage in appropriate languages to reinforce health and safety training
- Provide "chef mats" in areas where employees stand for extended periods
- Repaint and decorate to create a calm and welcoming atmosphere (in line with the rest of the hospital's public areas).
- Improve ventilation system for better (fresher) air quality

- Install new flooring designed to better handle spills
- Redesign food storage and prep areas for increased efficiency
- Redesign customer flow to create more space around cashier stations

Organizational level implementation

Risks

In the employee survey, food service staff as a group indicated that they felt they needed more training on safety and health measures. A related factor was that training materials were not always available in the languages spoken by the kitchen staff, and while they were reported that they understood, it was difficult for trainers to assess the accuracy of the self reports. Focus groups with staff found that another factor was the crowd flow; almost everyone arrived in the same hour period, making it stressful for the cooks, the line servers and cashiers. Although there hadn't been any recent serious burn accidents, frequent smaller burns and cuts were reported. Some of these staff members were long-time employees who knew many of the other employees, but if they took a minute to say hello, the stares of the others waiting impatiently only added to their stress. Employees reported often missing their breaks because of the volume of the work. There wasn't enough seating in the cafeteria, so mostly people purchased food and returned to their work areas to eat. This also meant that employees thought of the meals as "fast food" rather than a sit-down meal, so the biggest sellers were burgers and fries or chips with a soda. This also were among the least expensive meals. Satisfaction surveys and employee health risk appraisals showed that employees were not satisfied with the limited list of healthy offerings and were unaware of caloric content of cafeteria items.

Idea list

- Provide more regular safety training for staff, and include translated materials
- Collaborate with professional trainers in the Human Resources department to make the training more interactive and engaging
- Include more employee seating in the cafeteria
- Conduct a quick-and-easy food survey to identify which kinds of healthier foods employees wanted available
- Provide healthy foods in easy-to-carry containers and promote foods that don't require containers, like oranges and bananas
- Use labeling systems to help employees keep track of their calorie intake (people still wanted choices whether the food was "healthier" or not)
- Engage the hospital nutrition department to provide "Rate Your Plate" or "Ask the Nutritionist" events in the cafeteria, where employees could learn about the healthier choices available in the new cafeteria
- Subsidize healthier options so that they cost the same or less than the less healthy choices and use point of purchase promotion to encourage sales
- Provide brief, easy-to-read handouts about topics like food safety at home

- Provide education about portion control
- Experiment with more varieties of ethnic cuisines, particularly those lower in calories than American fast food; offer samples to gauge employee response
- Partner with local food producers or a farmers' market to provide seasonally fresh fruits and vegetables, including quantities to take home for the family
- Look into partnering with a local Farmer's Market to come on site once a week.
- Consider whether the lunch break can be lengthened by 15 minutes
- Provide picnic areas outside in good weather
- Make sure that vending machines have healthy options for off-hours
- Engage mid-level management to encourage employees not to skip breaks (and schedule more coverage whenever possible)

Individual level implementation

Risks

Employees working in the kitchen reported higher than average levels of injury, fatigue and stress. In focus group discussions and on surveys, employees overwhelmingly reported wanting or needing to lose weight, but didn't feel the cafeteria was the place to make healthy choices. They also indicated that they had to choose between eating and walking because there just wasn't time to do both. Because they were tired at the end of the work day, they were more likely to purchase fast food on the way home rather than plan to cook a healthier meal.

Idea List

- Provide state-of-the-art protection for food preparation workers (mesh gloves, fire retardant oven mitts, etc.)
- Provide a subsidy for comfortable shoes that provide arch support for employees who were required to stand for long periods
- Establish a Weight Watchers At Work program/club, with discounted memberships as an incentive. Offer calorie counter applications on the Health program web site
- Calculate and provide Weight Watchers "Points" for cafeteria offerings and use Weight Watchers recipes; distribute free copies of recipes
- Pilot test using "Family Size" take-out containers of main courses so that parents could bring a nutritious meal home with them instead of stopping at the drive-through

Integrated team's action plan

The team organized these ideas into tasks around the appropriate departments. With the designated managers, they created budgets, timelines, and decided upon evaluation measures to track. The health promotion staff from Human Resources researched evidence-based nutrition programs that were available online. Health and Safety staff

organized trainings and scheduled remediation tasks. The team determined that the scope of the changes required a promotional campaign, so they enlisted the hospital's communications staff to help them create a campaign and a special event to kick off the new program. The changes were unveiled at the hospital's summer family open house/family picnic so that employees' families could also attend.

Sample integrated programs

Creating activities and events that integrate and address occupational health and safety with worksite health promotion on all levels can be challenging. The best ideas for integration come from convening a multi-disciplinary group of people who are committed to improving worker health and understand the specific work processes and conditions. This is why a representative, integrated employee working group is foundational.

Samples of existing integrated programs are included in Appendix 1. One of these examples is a description and sample agenda for a **New Employee Orientation**. When an organization is committed to the SafeWell approach to worker health, it will be critical to provide new employees with an understanding of it. The Orientation provides an important opportunity to convey to new employees the mission, values, culture, and organizational commitment to their health and well-being. Each new employee will need to be introduced to these ideas and the expectation that while working there, they will need to embody them.

The program for **Carbon Monoxide Testing** shows how an interactive activity can be used to open a discussion with employees about their exposure to tobacco smoke and other hazardous substances or fumes at work and at home. Offering an individual "reading" from the analyzer has proved to be effective in attracting participants as well as personalizing the health message.

The **Label Lingo** program combines the ideas of reading food labels with reading labels on substances encountered in the workplace, and the ways in which substances—nutritious or otherwise—enter the body. This program could be used, for example, in conjunction with a cafeteria labeling campaign to highlight healthy options.

Organizations may not be able right away to create a campaign that includes activities that are completely integrated, but creating conceptual linkages is a step in the right direction and can open the way to considering a behavior change that has little motivation on its own. Bringing together the right people to represent OSH, HR, and WHP; having data to use for objectives and goals; knowing the audience; and applying some creative problem solving are all key factors for developing meaningful workplace programs.

Organizations using the SafeWell approach

There is increasing interest in successful strategies for healthy and productive workplaces. Some of the world's outstanding corporations, and some smaller organizations, have begun to look for integrated solutions. Included here are examples from the hospital sector, an international corporation, and one of the United States' largest government agencies.

Dartmouth-Hitchcock Medical Center

Dartmouth-Hitchcock Medical Center (D-H) is a nationally ranked academic medical center located in Lebanon, New Hampshire. Accredited by the Joint Commission, this teaching hospital is a 369-bed general medical and surgical facility with 19,874 recently reported admissions. The DMHC health system includes an academic medical center and a multispecialty physician group practice, which together employ more than 8,000 physicians, nurses and staff members across several locations. Dartmouth-Hitchcock's vision is to achieve the healthiest population possible, starting with their own workforce.

D-H's "Live Well/Work Well" (LWWW) is a health and well-being program that offers employees and their families the resources to be able to enjoy a healthier lifestyle and do what they want to do at home and at work. The program offers a wide range of health-related benefits and services, from immunizations and individual health promotion to occupational health and environmental medicine programs. Employees are offered free health and wellness assessments (followed up with video coaching), personalized nutritional assessments, interactive tools that provide education and recommendations for better sleep, health screenings, fitness classes (and scenic walking trails) and smoking cessation tools. LWWW also oversees workplace disability management and provides care management for complex or chronic medical conditions. The program's occupational health components include:

- Conducting workplace industrial hygiene and safety assessments
- Helping departments comply with OSHA, EPA, and Joint Commission standards
- Developing departmental safety programs
- Responding to employee indoor air quality exposure concerns
- Conducting workplace ergonomic assessments and recommendations of proper workstation set-up
- Reviewing employee reports of injury and conducts accident investigations
- Responding to hazardous chemical spills and conducting hazardous waste assessment, collection and disposal
- Supporting unit fire drills and fire safety training
- Through risk communication, working with directors to address employee health and safety concerns

The program is administered with careful attention to employee feedback, which it solicits and encourages. It has a focus on prevention, through education and training,

rather than simply monitoring compliance. LWWW provides customized services to departments with higher rates of occupational injuries or illnesses, and uses injury and illness reporting as sentinel events for employee health and wellness screening and to engage managers in efforts to improve worker health and well-being.

The overall program demonstrates DMHC's commitment from top management to strive to improve the health and wellbeing of all employees through high quality programs and effective policies related to occupational safety and health, workplace health promotion, and human resources.

Summarized from <http://employees.dartmouth-hitchcock.org/livewellworkwell.html>

NASA

The National Aeronautics and Space Administration has been a pioneer in the field of integrated worker health. With its workforce of 72,000 people in 14 locations, working in a highly competitive and stressful environment, employee health and productivity are critical to NASA's success. The Office of the Chief Health and Medical Officer (OCHMO) is responsible for the health and well-being of employees, providing guidance and oversight to approximately 400 Occupational Health professionals in order to create a network of support for the NASA workforce. The goal of OCHMO is to ensure that *“every agency employee, upon separation from NASA, is healthier than the average American worker as a result of their experience with NASA occupational and preventive health programs.”*[1]

In 2003, realizing the need for a proactive effort to combat the high-stress, high burn-out atmosphere, OCHMO contracted with the Institute of Medicine (IOM) at the National Academies to review and make specific recommendations to improve NASA's occupational health programs. The IOM commissioned a committee that reviewed the literature, made site visits, and held an information-gathering workshop. The result, in 2005, was the report, *“Integrating Employee Health: A Model Program for NASA”* (available at www.iom.edu). The Committee found that NASA was ahead of its time in fostering employee health and safety programs, but that it could still benefit from a methodical and thorough integration of its health programs. The report suggested that occupational health programs be integrated with occupational and non-occupational disability and health benefits, program focus shifts from center-specific to employee-specific, and centralized collection of uniform health metrics and utilization data be implemented.[1] This report remains a vital capstone of integration.

In the last six years, OCHMO has introduced annual *Healthier You Campaigns* that promote the message of personal accountability for Health and Safety by enlisting a variety of tools. Campaign components include a 12-month *Health Calendar* that discusses different health topics and introduces a variety of learning activities in the context of a common theme. One thousand copies of the monthly Mayo Clinic *Embody Health* newsletters are distributed across all Centers. *Embody Health* (<https://www.nasahealthieryou.com/>) is an online Mayo Clinic e-health package for

health assessment and promotion, including a web portal for interactive activities such as *Health Assessment*, *Ask an Expert*, *Diseases and Conditions*, and *Healthful Recipes*. Site access (using a unique identifier for confidentiality) is available to all NASA employees, their spouses and children over the age of eighteen.

Summarized from <http://ohp.nasa.gov/index.html>.

Johnson & Johnson

The Johnson & Johnson Corporation includes more than 250 operating companies in 60 countries employing approximately 115,000 people. It is the world's sixth-largest consumer health company.

Johnson & Johnson has developed a credo to clearly state its collective values: "...a culture that celebrates diversity and diverse perspectives fosters a balance between work and home life and supports employee efforts to have a positive impact on communities."

Johnson & Johnson's Healthy People program provides employee assistance, occupational health and wellness, and health promotion services, along with a full suite of online resources through Health Media™ and a unique approach to increasing physical and emotional capacity through the Human Performance Institute™ and its Corporate Athlete™ energy management principles. The company uses a voluntary employee Health Profile to design health programs to address key employee health risks. The profile is a confidential questionnaire that identifies health and lifestyle risks including tobacco use, blood pressure, cholesterol, and inactivity. In 2009, more than 30,000, U.S. employees participated in the Health Profile screening. An analysis of US data revealed that the top three risks among employees are unhealthy eating, physical inactivity, and obesity. To reduce these risks J&J implemented health and wellness programs and established company-wide performance goals.

Johnson & Johnson has developed a program called "Healthy Future 2015" which consists of seven strategic priorities, supported by 15 goals and corresponding targets to measure and drive performance. The Healthy Future 2015 strategies include several high-level goals (note the goal in bold type is related specifically to a healthy workplace and employees):

- Honoring our responsibility to communities by advancing community wellness by launching health initiatives to help people gain access to timely, easy-to-understand, health-related information
- Honoring our responsibility to communities by enhancing outcome measurement in philanthropy by assisting our philanthropic partners' capacity to measure program outcomes and raising the standard of health outcome measurement
- **Fostering the most engaged, health-conscious and safe employees in the world by improving upon our global culture of health and safety in our workplace, and continuing to strive to make Johnson & Johnson a place where our employees are proud and excited to work**

- Building on our legacy in safeguarding the planet by reducing the environmental impacts of our operations and our products
- Partnering with suppliers who embrace sustainability by joining with suppliers who demonstrate a similar commitment to ours through their practices, goal-setting and the positive impacts they seek to achieve
- Advancing global health through research and development for neglected diseases and affordable access to medicines by working to identify new and affordable ways to address these issues, and partnering with like-minded organizations to help expand our impact on global health
- Committing to enhanced transparency and accessing the power of external collaboration by collaborating with partners, and providing transparency on our products and business practices

Summarized from: <http://www.jnj.com/connect/about-jnj/>

References

1. Institute of Medicine, *Integrating Employee Health: A Model Program for NASA*. 2005, National Academies Press.

Appendix 1: Sample SafeWell programs

Program A: New Employee SafeWell Orientation

The orientation of new employees presents an ideal opportunity to begin introducing them to the SafeWell culture. From the staff who give the orientation presentations, to the materials the employee takes home, every aspect of the orientation can reflect the SafeWell principles. It is also critical that employees hear the message from the highest level of the organization--ideally, from one of the company's top administrators or through a videotaped message from the CEO (some sample talking points are included on below). The Sample Agenda illustrates how these elements can be incorporated into the day's activities.

Description

As the Steering Committee oversees the rollout of the SafeWell approach in the company, it needs to ensure that the integrated approach is incorporated into all possible aspects of the organization. People who come to work for the company may have never worked in a setting with this philosophy, so it makes sense to begin with the New Employee Orientation (NEO). The Steering Committee can direct or collaborate with Human Resources to develop a NEO program, including the agenda, appropriate hand-outs, and educational materials that reflect the company's integrated and comprehensive approach to safety, health, and wellness.

In the NEO, newly hired employees are introduced to the overall mission and values of the company. In addition, they begin the process of learning about important workplace policies and procedures, a process that continues into their specific department orientation. Many rules and practices relate to a healthcare worksite's safety and health concerns, for example, emergency procedures, infection control, bloodborne pathogen exposures, radiation hazards, and many other topics. The orientation is a useful venue for communicating with new employees about management's commitment to worker and worksite health, wellbeing, and safety.

Company representatives explain the company's commitment to providing a workplace that is safe and that supports employee goals to achieve or maintain optimal physical and mental wellness. Company wellness initiatives, incentives for joining an exercise facility or programs for quitting smoking, personal health assessments (e.g. biometrics, Health Risk Appraisals), annual safety-wellness fairs, and personal consultations are all presented. A Sample Agenda for new employee orientation-within the integrated safety, health, and wellness approach is provided on later in this section.

Educational format

This sample group event takes place over a full day as soon as the employee's hiring requirements have been met (e.g., TB test in a health care facility). In most medium to large companies, NEO sessions are held weekly.

Objectives for participants: Key messages

Following this activity, participants will be able to:

- Explain in their own words the company's mission and how employees' health and well-being fits into that mission
- Identify the organizational structure of SafeWell at their worksite: the Steering committee, working groups, etc.
- Identify examples of hazardous work and home exposures and behaviors (e.g., carbon monoxide, secondhand smoke personal hazardous behaviors (e.g. smoking)
- Explain in their own words why the company is invested in their personal health
- Identify exposures at work, in the general environment, and at home, that overlap (e.g., stress)
- Understand that a safe and healthy worksite is a productive worksite
- Understand that OSH is the employer's legal responsibility and workers have a significant role in creating a safe and healthy work environment
- Explain the SafeWell initiative at their worksite and how it integrates OSH and HP to improve and maintain the health and well-being of workers
- Identify where to locate SafeWell resources around the company

Staffing

Staff representing the areas of Human Resources, OSH, and WHP are all required to attend and present. One or two members of SafeWell committees may be present to talk about their roles.

Equipment and set-up

- An LCD projection system for presentations/videos
- Chairs and tables arranged in a semi-circle
- Fire extinguishers and appropriate safety equipment for training or demonstrating
- Educational materials
- Company brochure
- Company intranet guide
- SafeWell guide to company activities and resources: A well-designed, easily readable hand-out on the worksite's integrated safety, health, and wellness approach that includes:
 - Mission and values of company's approach to worker health and well-being
 - Summary of critical worksite safety and health issues
 - Guides to keep workers and the worksite safe and healthy
 - Explanation of how SafeWell benefits workers and workers' families

- List of all worksite's health promotion activities
- List of working committee and steering committee members

How to conduct this activity

- Provide at least two educators for safety, health, and wellness orientation component:
 - One available for safety and health briefing
 - One for wellness briefing
- Introduce presenters
- Distribute materials
- Review agenda
- Evaluate the quality of orientation at the very end, including how well safety, health, and wellness topics are understood
- Encourage questions
- Be sure that employees know where to go to get questions answered
- Complete evaluation forms

Tie-in with SafeWell initiatives

This activity provides a good opportunity to offer new staff specific ways to get involved in SafeWell activities and events. Have sign-up sheets ready for upcoming activities; "job descriptions" for working group members, etc.

Promotion

Promotion is not needed for this activity, as new hires are directed to attend by the hiring manager.

Evaluation

- True/False or fill in the blanks quiz for knowledge of company's core mission and SafeWell (anonymous)
- Count participants for tracking
- Count hours for tracking (including prep and clean up)

Follow-up

A new employee can absorb only a limited amount of information in the first few days. For that reason, a buddy system could be developed that supplements the orientation. A buddy system can provide on-the-job reinforcement of the information presented to the new employee at the NEO. Each employee can be paired up with a buddy who can answer questions the new employee might have. Such a system can reinforce the organization's integrated safety, health, and wellness approach both to the new employee, as well as to the experienced workers who are the "buddies."

Other organizational opportunities for reinforcing an integrated approach to worker health could occur at annual safety refresher trainings that employees attend, as well as worksite safety-wellness fairs. All such activities promote employees' participation in health promotion activities as well as improve safety and health practices.

Sample talking points about SafeWell from the CEO

The key points for the highest company representative to cover in his or her overview might include:

- The company's mission is to provide an "Environment of Care" to all our constituents: our patients and their families, our community, and most importantly, our employees
- The organization has adopted SafeWell, an approach to worker health and well-being
 - The organization functions at its best when employees are healthy, safe, and productive
 - Health promotion and health protection, home life, and work life are not easily separated in our new work culture
 - SafeWell represents a unified, coordinated effort, in every department and at every level, to integrate these areas
- You may not have ever worked in an organization that practices this approach, so here are the basics:
 - Your safety is key. We have Tom Jones here from our EHS department to tell you how we put that into practice every day
 - Your health is important. We will offer as many opportunities as we can for you to set health goals and get the support and information you need to get healthy or maintain your optimal health. Denise will tell you about those.
- That's what we bring to this effort.
- In return what do we need from you? We need your input.
 - If you see something that's unsafe, we need to know about it.
 - If you have ideas for a great health campaign, we want to hear about it.
 - If you see an opportunity for us to improve the SafeWell program, we're counting on you to tell us.
 - Without my support, this program wouldn't happen. But without your participation, it won't happen either. Everyone who works here is a critical part of the whole effort.
- How can you participate? Well, there are many ways. Some of our other presenters are going to tell you about them.

The facilitator for the session should then introduce the Working Group members.

- There are SafeWell working groups that act as the foundation of the program. You'll meet the member(s) of your department's working group and one of them

- will be your “buddy.” This person will be able to answer any questions or address any concerns you have as you come on board our organization.
- For immediate concerns, we have an intranet system where with one button you can report an unsafe or potentially unsafe condition that needs immediate attention.
 - On that same intranet system, you can do a personalized health assessment, review your results, and then look over the options that are available to you if you want to make changes in your personal health habits.
 - If you already know what the problem is—for instance stress-related problems, because let’s face it, this is a stressful environment -you can consult, by phone or online, with a counselor who can direct you to the appropriate resources while totally protecting your privacy.
 - The SafeWell intranet is your lifeline. If you’re not comfortable with a computer, we have training courses for you. And of course, there’s still the phone, and even real people you can talk with.
- So, this system represents a big investment on our part, and why do we do it? Because you invest 8 hours a day or more with us, month after month, year after year. We want you to stay here. We want you to thrive here. . We’ve looked at the research, and we know that this integrated system, where we all collaborate to keep our organization as safe and as healthy as it can be, will return our investment a hundredfold. Our patients will get the best possible care from people who enjoy the best possible health and well-being.
 - What questions do you have?

New Employee Orientation sample agenda

Sample agenda within the integrated safety, health and wellness approach

Time	Topic	Presented by
8:30-9:00	Registration	
9:00-9:30	Welcome, opening, and introduction	Company CEO/video, Human Resources Representative
9:30-10:00	Key presentation about the company, company's mission, and key information	Human Resources Representative
10:00-10:30	Company's integrated approach to safety, health and wellness	Safety & Health, and Health Promotion Representatives
10:30	Break	
10:45-11:15	Company's workforce and code of conduct: Company's policies to respect co-workers	Human Resources Representative
11:15-11:35	Worksite Safety and Health Session 1: Emergency preparedness: fire safety, security, other emergencies in the company	Safety and Health Representative
11:35-12:00	Worksite Health Promotion Session 1: What HP activities does the company offer?	Health Promotion Representative
12:00-12:30	Lunch	
12:30-1:00	Key resources	Human Resources Representative
1:00-1:30	Worksite Safety and Health Session 2: Key safety and health issues in the workplace: infection prevention & control; ergonomic interventions to minimize manual handling	Safety and Health Representative
1:30-1:45	Break	
1:45-2:30	Worksite tour	
2:30-3:00	Benefits	Human Resources Representative
3:00-3:30	Worksite Health Promotion Session 2: Personal health assessments	Health Promotion Representative
3:30-4:00	Wrap-up: Questions and answers	Human Resources Representative

Program B: Carbon Monoxide Testing: “You Are What You Breathe”

Description

A table staffed by an educator will display a carbon monoxide (CO) analyzer, educational handouts, an informational display, and self-assessment questionnaire. Participants will receive a brief rationale for the activity from an educator. S/he will operate the CO Analyzer, record participant results on the handout (booklet) and follow the talking and counseling tips (see below). Possibilities for CO exposure from tobacco smoke (both active and passive), occupational exposures, and the general environment (independent of their results) will be explored with participants. Cigarette smoke will be highlighted as one of the major sources of CO exposure, as will potential non-tobacco sources of CO (e.g. fork lift exhaust indoors). Possible job-related, home or other CO exposures will be discussed with individual workers, and ways to reduce, avoid, or eliminate these exposures will be encouraged.

Educational format

This activity can be a stand-alone event or can be incorporated into a Health Fair or other larger event.

Objectives for participants:

Following this activity, participants will be able to:

- Identify their own CO readings and interpret it using the charts in their booklet or the informational display
- Identify personal behaviors (smoking) and passive exposures (e.g. secondhand smoke)
- Identify exposures at work, in the general environment, and at home that may elevate CO levels in the body
- State that tobacco smoke is one of the major sources of elevated CO (non-tobacco sources, although much less common, can elevate CO to levels that are immediately dangerous to life and health)
- State that CO is harmful because it reduces the supply of oxygen to the tissues, which presents a threat in particular to the heart and brain, because of their high oxygen needs
- State that the harmful effects of smoking cannot be offset completely by any known counter-measures; the only way to avoid the harmful effects of smoking is not to smoke and to avoid the tobacco smoke of others
- Strategize about ways to reduce or avoid CO exposures in the workplace, home and the general environment

Staffing

This activity can be run by one staff person.

Equipment and setup

It's possible that a local office of the American Cancer Society or American Lung Association has equipment that can be borrowed or rented. Several brands can be purchased, including:

- Smokerlyzer (<http://www.bedfont.com/uk/english/smokerlyzer>)
- CO Sleuth, Breathe E-Z Systems, Inc. (<http://www.testbreath.com/index.asp>)

Supplies

Disposable one-use tubes are also available from product distributors like those listed above. For 100 tubes the cost is about \$35.

Educational materials

- Handouts with chart (see below)
- Quit smoking brochures (from community partner agencies or local department of health)

How to conduct this activity

1. Hi! Are you interested in checking your carbon monoxide level?
2. *If yes:* This is a Carbon Monoxide Analyzer. Have you done this in the past?
3. Acknowledge responses and provide the following information as needed.
4. "The CO analyzer measures the amount of carbon monoxide in your lungs and blood."
5. Place a fresh mouth piece on the hose attachment in front of every participant.
6. Conduct a practice run with the participant before the actual test.
7. Ask participant to hold his/her breath for 15 seconds.
8. Instruct participant to place his/her mouth around the mouth piece, make a tight seal with their lips, and exhale for 9 seconds or for as long as it takes to completely exhale the air in their lungs, but without excessive force.
9. Ask participant to keep his/her mouth on the mouthpiece till you tell them to remove it.
10. Tell participant they did a nice job.
11. Tell participant their reading and refer to the chart and interpret the reading (see interpreting results, counseling tips and talking points below).

CO Reading Interpretation Chart

ppm CO		Symptoms & Health Risks	
↑ 60 50 25 15 10 5 0		}Severe	<ul style="list-style-type: none"> • Risk of heart attack doubles • Nausea, headache, irritability
		}High	<ul style="list-style-type: none"> • Slight headaches • Shortness of breath on exertion • Impaired thinking • Strained heart
		}Moderate	<ul style="list-style-type: none"> • Blood thickens from extra red cells, making heart work harder and increasing risk of abnormal clots
		}Low	<ul style="list-style-type: none"> • Body makes extra red blood cells to get more oxygen • Increased blood flow to brain and heart
		}Normal	<ul style="list-style-type: none"> • 0-4 ppm is normal

Interpreting results

Carbon monoxide is an odorless, poisonous gas that pollutes the air. Increased levels of CO can occur by exposure to car exhaust, cigarette smoke, second hand cigarette smoke, or a leaky furnace. CO “robs” oxygen from the blood, and increases stress on the heart. That’s one reason why smokers are more likely to develop heart disease.

- CO level less than 5ppm: This is normal.

For smokers

- **CO = 5 to 10:** Your CO level is in a range we often see for smokers. Smokers with CO in this range have increased blood flow to certain organs (e.g., brain and heart). That means that your heart has to work harder than usual.
- **CO = 10 - 30:** Your CO level is about average for a smoker. At this level, your body produces more red blood cells trying to capture more oxygen. This thickens your blood, strains your heart, and increases the chance of clotting.
- **CO > 30:** Your CO level is higher than that of the average smoker. Typically we see smokers in the 10 - 30 ppm range. At this level, your heart is working very hard. The risk of heart problems increases when CO is this high. You may also experience headaches, shortness of breath, and impaired thinking.

- **For all CO levels:** A smoker's CO level increases over the course of a day with each cigarette smoked. CO is stored in the body and is reduced gradually after several hours of not smoking. Smokers' CO levels are usually pretty low in the morning and gradually increase over the day. After only about 24 hours of not smoking, the levels are similar to those found in nonsmokers, meaning that the body starts to recover after a quit attempt. It doesn't mean that a person's system is back to normal.

Counseling tips for smokers

1. Refer to CO level: "What do you think of these results?"
Note: Their response may give you a sense of their stage of readiness to address their smoking, so shape the rest of the conversation based on what you learn.
 - Acknowledge their feelings
 - If surprised/embarrassed: "You seem surprised by these results. Was this not what you expected? This machine gives you information that may help you in case you are interested in changing your smoking."
 - If happy with results/indifferent: "You seem pleased with these results?"
 - If unhappy/upset: "You seem concerned with the results...tell me a little bit about that, what are you concerned about?"
 - If no reaction, use a prompt such as "Were the results what you expected or were you surprised?"
2. "Smoking raises the CO level in your body. Tell me a little about your smoking habits...how often do you smoke, etc?"
 - Try to get info about when they smoke: "When do you mostly want a cigarette?" (e.g. in the morning, before or after lunch, etc.)
 - How often: "About how many times per day do you smoke?"
 - Have they tried to quit in the past? (Tell them that most smokers on average go through 6 quit attempts before they quit.)
3. What changes would you like to make if any?"
Or if they've mentioned wanting to quit, ask "What do you hope to gain by quitting?"
 - Help them verbalize the *benefits* of quitting and the disadvantages of not quitting and let them weigh the choices.
 - Emphasize that their goals should be progressive, specific, and short-term to start.
 - Ask about social support, if appropriate.
 - Be supportive to those who think they may not be able to change.
4. Emphasize project recommendations: "SafeWell recommends that you quit and stay smoke free."
 - If meeting this: Praise and treat as action/maintenance.

- If doing less and they haven't reached their goal, praise what they are doing, for example: "It's great that you are trying to reduce your smoking OR trying to quit, so now may be a good time to:
 - Attend activities on ways to reduce or quit smoking.
 - Talk to your doctor about the best way for you to quit smoking or ...
 - Read information about smoking cessation.

5. Write participant's goal on a worksheet if appropriate.

For non-smokers

CO<5 This is normal.

- **CO = 5 to 10:** Your CO level is in a range which causes increased blood flow to certain organs (e.g. brain and heart). That means that your heart has to work harder than usual.
- **CO = 10 - 30:** At this level, your body produces more red blood cells trying to capture more oxygen. This thickens your blood, strains your heart and increases the chance of clotting.
- **CO > 30:** Your CO level is higher than the average smokers'. Typically we see smokers in the 10 - 30 ppm range. At this level, your heart is working very hard. The risk of heart problems increases when CO is this high. You may also experience headaches, shortness of breath, and impaired thinking.
- **For all CO levels:** CO is stored in the body, and is reduced gradually, after several hours of not being exposed. After only about 24 hours of not being exposed, the levels are similar to those found in nonsmokers, meaning that the body starts to recover after a quit attempt. However, it doesn't mean that a person's system is back to normal.

Counseling tips for non-smokers

1. Refer to CO level: "What do you think of these results?"

Note: Their response may give you a sense of their readiness to address exposures, so shape the rest of the conversation based on what you learn.

 - Acknowledge their feelings.
 - If surprised/embarrassed: "You seem surprised by these results. Was this not what you expected? This machine gives you information that may tell us whether you are being exposed to sources of CO."
 - If happy with results/indifferent: "You seem pleased with these results?"
 - If unhappy/upset: "You seem concerned with the results...tell me a little bit about that, what are you concerned about?"
 - If no reaction, use a prompt such as "Were they what you expected or were you surprised?"
2. Smoking, exposures to secondhand smoke and other sources of CO exposures such as leaky furnaces or exhaust fumes could raise the CO level in your body.

- Let's review some of the possible sources of CO exposure." Refer to the handout for a list of CO hazards in the home, workplace, and environment.
- Try to obtain information about when and where they may be exposed to CO sources--at home, at work, or anywhere in between.
3. If they know of a probable source, ask them if they have tried to address the source, e.g. fixing the furnace or speaking with someone at work, if it's a work site exposure.
 - If they have tried to address the source, provide support for their efforts.
 - If not, and the problem is at home, help them describe the *benefits* of addressing the problem and disadvantages of not addressing the problem, and then let them weigh their choices.
 - If not and the problem is at work, report the issue to the onsite Industrial Hygienist or other appropriate staff to notify management.
 4. Emphasize project recommendations: "SafeWell is working with the company union and management to maintain workers' safety at work."

General talking points

What is the margin of error? Plus/minus 5%.

Could a reading of around 6 ppm CO be caused by a leaky furnace or another problem?

It is possible, but not likely. I would consider 6 ppm to be at the high end of normal and not something to be greatly concerned about. You can try taking another CO Analyzer reading a little later.

If I call the Gas Company to come and check my furnace, will they charge me? I'm not sure. It may be worth a call to the gas company to ask them if they have a procedure for people calling with concerns about carbon monoxide and to request a copy of the brochure or have them explain the procedure. Furnaces and indoor heaters should be serviced periodically, usually once a year. Regular maintenance is the best way to prevent problems. It's also a good way to save on fuel costs by keeping the efficiency of your furnace as high as possible. When you have your furnace serviced, that's a good time to ask your heating company about potential CO concerns for your particular heating/cooling system.

How long does the CO stay in my system, and how quickly does it leave my body? CO has a half-life in the body of about 4 hours. That means that starting with any level of CO in the body, half of it will be gone 4 hours after the exposure stops (1/4 will remain after 8 hours, 1/8 will remain after 12 hours, etc.)

Why is the CO reading low or normal if I smoke? It could be that the smoker may not have had a cigarette in the last 8 or 10 hours or the machine may not be functioning properly.

Why is my CO reading high and I don't smoke? There are many possible explanations. A non-smoker may be getting exposed to another CO source (see table below) or the machine may not be functioning properly.

I was at a party last night with lots of smokers - will this show up on my reading? Will second-hand smoke exposure lead to detectable readings on the CO Analyzer? Not likely, since two or more half-lives will have passed already, leaving 1/8 or less of the CO level when you left the party. While you will breathe in CO in second-hand smoke, it's still a lot less than you would breathe through direct smoking. Studies show that second-hand smoke may elevate non-smokers' CO somewhat.

How does holding one's breath affect the CO reading? The person being tested is asked to hold his or her breath so that any CO present in the body can build up temporarily in the lungs and make it easier to measure. If someone holds their breath longer than the prescribed 15 seconds, it may elevate their reading. Conversely, if someone holds their breath for shorter than the recommended 15 seconds, it may decrease their CO reading.

Does air pollution affect CO level? It can, if CO is one of the air pollutants that the person is exposed to, and the exposure was within the last few hours or so (half-life considerations). For the general population, sitting in a lot of traffic can raise your CO level because automobile exhaust contains CO. As an extreme example of this, automobile tunnel attendants (the people sitting in the little booths inside the tunnel) get elevated CO levels if they do not have a supply of fresh air.

Does a low CO reading mean I don't have to worry about air pollution? Unfortunately, no. Air pollution can contain many different toxic agents, depending on the source. For example, automobile exhaust can contain lead, oxides of sulfur and nitrogen, and particulates. These would not be detected by the CO Analyzer.

Can a person's stress level affect CO readings? Not likely, unless they are so stressed that they don't breathe deeply and can't perform the test properly. This would be an effect only on the measurement process; stress does not directly change CO levels in the body.

Do allergies affect CO readings? No, not likely.

At what level should a non-smoker be worried if they have no recognized sources of CO exposure? This is not a sign of immediate danger. There are many possible ways to be exposed to CO. Let's look at the table (or refer participant to their health care provider.)

Can CO level be affected by adhesives or paint used on the job or in the home? Yes. Methylene chloride may be used in some adhesive systems and it is widely used as a paint stripper. Methylene chloride is absorbed through the skin and by breathing. It is metabolized into CO once it's inside the body. See the table below for possible control measures. It is in some paints. More commonly, it's in cleaners and paint strippers.

What other chemicals can elevate CO levels (on the job or in the home)? Methylene chloride is the only one (unless equipment is being thrown off calibration by some other chemical.)

What is organic fuel? Organic means that a fuel was made from something that was once alive (plants usually). For example, the common fossil fuels are made from plants, oil, natural gas, propane, gasoline, and kerosene. Wood is an organic fuel from trees. It can also be defined as a fuel containing carbon.

What kind of engines can generate CO? Engines that burn organic fuels can generate CO in the exhaust. An oil or wood fire produces smoke containing lots of CO and other things. Similarly, engines burn fuel more completely, but they also generate exhaust that contains CO. Electric motors do not generate CO because they use electricity as an energy source, rather than organic fuel.

How can a portable space heater give off CO? Many portable space heaters generate their heat by burning organic fuels. For example, propane is a common space heater fuel. Propane space heaters burn efficiently, but still can lead to CO problems if they are not properly operating and properly ventilated. Electric space heaters do not generate CO.

What's a compressor? A compressor is a machine that compresses air, the compressed air is used to run certain tools or other machines. Examples include pumps, commercial spray painters, and jack hammer(s). Some compressors are powered by organic fuels, such as propane, to generate pressure, and thus can be a CO source.

Carbon monoxide hazards in the workplace, home, and environment	
Sources	Solutions
<p>Tobacco smoke</p> <p>From directly inhaling cigarette, cigar, or pipe smoke</p> <p>From passively inhaling cigarette, cigar, or pipe smoke</p>	<p>Tobacco smoke</p> <p>Don't smoke</p> <p>If you smoke, do not expose others to your smoke</p> <p>Advocate for strong workplace smoking policies</p>
<p>Burning organic fuels</p> <p>Exhaust from engines that use organic fuels, especially when used indoors or in an enclosed space</p> <p>From vehicles, such as trucks, cars, and fork lifts</p> <p>From other machines with engines, such as compressors and portable pumps</p> <p>From cooking equipment, such as gas stoves and ovens</p> <p>From heating equipment, such as furnaces, wood burning stoves, and portable space heaters</p>	<p>Burning organic fuels</p> <p>Don't run engines in enclosed buildings</p> <p>Always ensure good ventilation when using engines indoors</p> <p>Don't sit in a parked car with the engine running</p> <p>Keep engines tuned up</p> <p>Check your car exhaust system</p> <p>Have your furnace checked</p> <p>Consider a CO monitor for your workplace or home (~\$50)</p> <p>CO monitors sound an alarm before the gas reaches toxic levels</p>
<p>Other chemicals</p> <p>Your body can make CO from methylene chloride</p> <p>Methylene chloride is a solvent commonly used as a degreaser and furniture stripper</p> <p>You can absorb methylene chloride by breathing or through your skin</p>	<p>Other chemicals</p> <p>There are safer substitutes for many uses of methylene chloride</p> <p>If methylene chloride must be used, proper ventilation must be installed</p> <p>Respirators should be your last line of defense against methylene chloride</p>

Tie-in with management initiatives

This activity is a good way to initiate a company-wide smoking policy designed to reduce or eliminate on-site smoking, or to identify potential areas of CO exposure in a worksite. Smokers need sufficient notice to get information about quitting and consider the right method for them. This activity also provides awareness of the harmful effects of CO exposure from other smokers and also from occupational exposures.

Incentives for participation

- Raffle tickets

Promotion

- Posters
- Announcements at meetings
- Payroll stuffers
- Email
- Overhead paging
- Flyers
- Table Tents

Evaluation

- True/False quiz for knowledge
- Count participants for tracking
- Count hours for tracking (including prep and clean up)

Program C: “Label Lingo”

Description

The focus of this session is to help workers understand and use labels on food packages, cigarette packaging, and hazardous materials to take steps that may reduce their health risk. Worksite coordinators may wish to offer these sessions in conjunction with contests as suggested below. The session includes:

- Food and Drug Administration (FDA) requirements for packaged food and beverage labels
- Definitions of common terms used on food labels
- How to identify fat, carbohydrate, fiber, vitamin A and C content of products from food labels.
- ☐☐☐ Ingredients found in tobacco products (tar, nicotine, and hazardous substances)
- Ways to get information about hazardous materials: MSDS (Material Safety Data Sheets) and Chemical Labels

Notes to the facilitator

- Bring food package labels, a sample cigarette pack, and a copy of an MSDS and chemical label for materials that are used in the site.
- This session could be taught as two sequential sessions, if the subject matter requires more time.
- Note Optional sections.
- Reference: "Label Facts for Healthful Eating: Educators' Resource Guide," by Mona Boyd Brown, RD.

Supplies

- Small can of Crisco and small paper plates
- Name tag for instructor
- Food package labels to illustrate health claims and the Nutrition Facts label
- Fat-free crackers and fat-free cream cheese
- Cigarette packages with at least tar and nicotine contents and maybe ingredients

Forms needed

- Instructor evaluation
- Participant evaluation
- Attendance form

Facilitator's Guide for Label Lingo

Introduction

1. Welcome participants to the SafeWell Series.
2. Ask everyone to sign the Attendance Form.
3. Ask if anyone would like to briefly describe the SafeWell project. Reiterate the SafeWell mission as necessary.
4. State the objectives for this session.
5. Distribute the handouts, pencils and cards.

Activity: Understanding food labels

Q: How many of you read labels on food packages? Do you understand them? Do they help you choose foods?

Q: Have you noticed that the information has changed?

- Since the middle of 1994, food labels with nutrition information have been required by the F.D.A. on almost all packaged foods.
- Health claims have to be substantiated now. If a manufacturer labels its products with words such as "fat free" and "low sodium", the foods have to meet certain criteria. For example, "fat-free" means that 1 serving of that food has to contain less than half a gram of fat per serving. (Note that sometimes the serving size is reduced so that the item can meet the criteria.) "Fat-free" used to mean less than 1 gram per serving.

Q: What information can you get from a food label?

- Nutrition facts: Certain nutrients (fat, cholesterol, sodium, carbohydrates, and protein) must be listed by weight in grams per serving. (1 oz = 30 grams)
- Vitamins and minerals: Only vitamins A and C, calcium, and iron must be listed on the food label. Food companies have the option to list other vitamins and minerals that are in the food.
- Serving size.: This is now standardized for similar foods to make it easier to compare foods. For example, always compare the label serving size with the amount you actually eat.
- Daily values: The government has determined that the *reference diet* contains 2000 calories per day. Depending upon gender, body size and activity level, people need more or less than 200 kcals per day, and they will have to adjust the amounts accordingly.
- The % daily value: This tells you how much (by percentage) the nutrients in this food contribute towards a 2000-calorie diet.

Q: Does anyone happen to know what his or her caloric needs are?

- The number on the label is an average for adults. Your own calorie needs may be either less or more than the Daily Values on the label, depending on your gender, height, weight and physical activity.
- **Ingredient information:** Food manufacturers are required to list all ingredients by weight from the most to the least. For example, a canned soup that has tomatoes listed first on its ingredient list means that it contains more tomatoes by weight than other items in the ingredient list.
- Only seven types of health claims are permitted on food labels under the new legislation.

Q: Can anyone name one?

- Health claims link a food or food component (fat, fiber, vitamin C) to the risk of a disease or health-related condition, and are based on solid research results. Examples of health claims are:
 - Eating enough calcium may help prevent osteoporosis (thin, fragile bones).
 - Limiting the amount of sodium you eat may help prevent high blood pressure (hypertension).
 - Limiting the amount of saturated fat and cholesterol you eat may help prevent heart disease.

Q: What about the labeling requirements for meat and poultry products?

- Nutrition labeling for single-ingredient raw products, such as ground beef and chicken breast, is voluntary. For processed products--such as chicken franks, corned beef, and frozen entrees with meat or poultry--nutrition labeling is a MUST.

Q: What about the labeling requirements for fresh food?

- Most fresh supermarket foods, such as raw fruits, vegetables, and fish do not carry labels although the nutrition labeling law asks supermarkets to provide voluntarily the nutrition information for the 20 most commonly eaten raw fruits and vegetables and seafood. You may find the information listed in your local supermarket or on grocery bags.

Optional activity: What words mean

Words	What they mean
"Good source" "Contains" "Provides"	Contains 10-19% of the daily value per serving
"Excellent source of" "High" "Rich in"	Contains 20% or more of the daily value per serving.
"More" "Fortified"	Contains at least 10% more than the daily value for

"Enriched" "Added"	protein, vitamins, minerals, dietary fiber, or potassium per serving.
"Fiber"	Any food making a fiber claim must meet the requirements for a "good source" or "high" claim; must declare the level of total fat per serving if food is not "low fat".
"Lean"	Packaged seafood, game meat, cooked meat, or cooked poultry with less than 10 grams total fat, less than 4 grams saturated fat, and less than 95 milligrams cholesterol per serving.
"Extra lean"	Packaged seafood, game meat, cooked meat, or cooked poultry with less than 5 grams total fat, less than 2 grams saturated fat, and less than 95 milligrams cholesterol per serving.
"Fresh"	Raw food that has not been frozen, heat processed, or similarly preserved.
"Fresh frozen" "Frozen fresh"	Food quickly frozen while very fresh.

Activity: Spoon-out-the-fat demonstration

Have each participant choose a food label. Ask them to read their label for total fat, then change grams of fat to teaspoons of fat (5 grams of fat = 1 teaspoon). Ask them to spoon out from the Crisco can the teaspoons of fat per serving, and the teaspoons of fat for the serving they would eat.

- Q: If you had 65 grams of fat (13 teaspoons or less), to "spend" in the entire day, is this what you would want to spend it on?
- Q: Can you think of lower fat foods you might substitute for higher fat foods?

Have participants read their labels and discuss them.

Select 2-3 people to report their findings from the activity

Activity: Tobacco

Some points to make about cigarettes (and other forms of tobacco):

- Where's the Label? Tobacco products are an exception to most of the consumer goods we buy: currently they have no labels to tell us what the ingredients are, though that will be changing soon based on recent legislation. This issue is in the courts right now; some states are trying to require cigarette manufacturers to list ingredients.

- Cigarette packages do have information on two chemical ingredients in tobacco: tar and nicotine. You all are familiar with tar; it can cause cancer in your lungs. Nicotine is the substance that makes tobacco addictive. Tar and nicotine levels can differ by brand name: (refer to cigarette packs you brought). One thing that tobacco companies have done is to increase the nicotine content in cigarettes when they lower the tar level, keeping people addicted and smoking.

Activity: OH Material Safety Data Sheets

Q: When you work with chemicals, are there labels to tell you what's in the chemical?

- Sometimes you may see a label on a chemical barrel or container, but many times you won't. However, there is a way that you can find out the ingredients in any chemical at your workplace. It's called the Material Safety Data Sheet, or MSDS, and it is required by law for every chemical that your company buys or uses.
- You should be able to access MSDS at your worksite, but they are not typically stored with chemicals you might be using.
- Another source of information about chemicals in your workplace are chemical labels. Chemicals should be labeled right on their containers. A good label will tell you which hazardous ingredients might be contained in the product, what the hazards are, and what to do in case of emergency. In summary, there are many ways to get information about hazardous materials, including MSDS and labels. It's important to remember that print sources are not the only way to get information.
- Optional(as time allows)
 - Hazard Communication or Right-to-Know is a workplace law that says workers have a right-to-know the hazards of the materials they work with and how they can protect themselves.
 - (This law was passed by OSHA, the United States' Federal Occupational Safety & Health Administration)
 - Haz Comm, short for Hazard Communication, says by law that workplaces need to keep MSDS on file and accessible to employees.
 - Haz Comm also says that employers must have a labeling system for chemicals used in the workplace.
 - Additional SafeWell sessions are available to your workplace for more in-depth learning about MSDS and other sources of hazard information and control
- Optional (as time allows):
 - Another label that you might see directly in a product or on the door to a room is the multi-colored NFPA diamond.
 - NFPA stands for the National Fire Protection Association.

- These are hazard labels that were developed mainly for emergency responders, such as firefighters.
- NFPA diamonds can also be useful in raising day to day hazard awareness.
- The NFPA diamond has 4 sections.
- The top section, in red, rates flammability hazards (4 is the worst).
- The left section, in blue, rates health hazards (4 is the worst). Importantly, this only addresses short-term hazards, and does not include long-term hazards such as cancer. This is one of the limitations of day to day use of the NFPA diamonds. This is why you need to look at MSDS and other sources of information to get the full picture.
- The right section, in yellow, rates reactivity hazards (4 is the worst).

Activity: Taste Test

Fat-free crackers or bagel pieces (baked) and low-fat or fat-free cream cheese.

Activity: Spread the Word

- Spread the word to your co-workers (or colleagues) and bring one of them to the next session.
- Share what you have learned with your family. Show them how to read the labels on food packages.
- Choose a food from the cafeteria or vending machine and read the label to determine its fat and dietary fiber content.
- Find out where MSDSs are kept for your department. Look up one of the chemicals that you have in your work area.

Home activities

- Set a goal: Look at labels on at least 3 foods the next time you are in the supermarket.

Conclusion

- Promotion for other sessions: Encourage participants to attend other SafeWell sessions
- Please complete and return the evaluation form
- Any questions?

Appendix 2: Workplace health promotion and health protection tools and resources

Total Worker Health

Total Worker Health is a program of the National Institutes of Occupational Safety and Health. Its goal is to sustain and improve worker health through better work-based programs, policies, and practices. The site provides extensive background information, while its related site, “Essential Elements of Effective Workplace Programs and Policies for Improving Worker Health and Wellbeing,”

(<http://www.cdc.gov/niosh/TWH/essentials.html>) provides detailed guidance on program design, implementation, and evaluation for employers and employer-employee partnerships. <http://www.cdc.gov/niosh/programs/worklife/default.html>

The Community Guide to Public Health

The Guide to Community Preventive Services is a free resource from the Centers for Disease Control and Prevention, to help identify programs and policies to improve health and prevent disease in communities. Systematic reviews are used to provide evidence-based recommendations. The contents are searchable by disease/condition and also by “worksite.” See <http://www.thecommunityguide.org/worksite/index.html> for workplace health promotion topics. <http://www.thecommunityguide.org/about/index.html>

RTIPS (Research Tested Intervention Protocols)

RTIPs is a searchable database (available at <http://rtips.cancer.gov/rtips/index.do>) of cancer control interventions and program materials and is designed to provide program planners and public health practitioners easy and immediate access to research-tested materials. Search criteria include setting, ethnicity, age, gender, and topic area. There are currently 11 programs listed for the workplace setting. This site links to “Using What Works,” (http://cancercontrol.cancer.gov/use_what_works/start.htm), a train-the-trainer course that teaches users how to adapt a research-tested intervention program to the local community context.

Promoting Wellness at the Worksite: Employer Toolkits

This is a collection of Employer Toolkits from the Philadelphia BlueCross/Blue Shield. The toolkits are do-it-yourself health improvement and education programs that any team or an individual in your organization can implement. Each toolkit has everything you need to implement a program, including a toolkit guide, program guidelines, promotional flyers, registration forms, a participant welcome letter, certificates of completion, and program evaluation forms. (Contents may vary depending on the challenge or education program topic.)

http://www.ibx.com/worksite_wellness/employer_toolkits/index.html